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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/485,097	03/08/2000	BENNY MARTIN MATHIESEN	12875.10USWO	1469

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EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 10/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No. .

09/485,097

Applicant(s)

MATHIESEN, BENNY MARTIN

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 28 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. This action is in response to Amendment F received on 7/28/03. The substitute specification has been entered. The previous claim objections and 35 U.S.C. 112 rejections have been overcome.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings were received on 7/28/03. These drawings are acceptable.

Claim Rejections - 35 USC § 103

4. Claims 1-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumitomo (JP 52-6782) in view of Sandt (U.S. Patent 2,833,686) and Smuck et al. (DE 4202920).

Sumitomo discloses that it is known to melt-adhere a PTFE film to a (woven), e.g. glass fabric, in a heat and pressure lamination process. Sumitomo teaches one process wherein the laminating conditions are 390 °C and 5 to 10 Kg/cm² (0.5 to 1 N/mm²). (English Translation Abstract and, in the translation provided: Page 2, last line thru page 3, line 5 and page 3, lines 12-17). This reference is seen to correspond to/be consistent with applicant's admission as to what constitutes prior art/the state of the art (Page 1, lines 11-13 of applicants specification).

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Sandt discloses that in the bonding of PTFE films to ANY heat resistant material substrate in a heat and pressure bonding process, it is PREFERRED to cool the laminate so formed under pressure, i.e. by maintaining the laminating pressure, to minimize unequal contraction, i.e. shrinking, of the film (column 1, lines 15-17 and 32-41 and column 2, lines 4-72 and column 3, lines 1-4 and column 5, lines 35-40), such that it would have been obvious to one of ordinary skill in this art to employ this PREFERABLE (i.e. beneficial) cooling under pressure step/technique in conjunction with the process of Sumitomo to minimize shrinking of the PTFE.

As to a continuous process, Smuck et al. discloses a laminating apparatus composed of a heated roller pair/couple and a cooled/cooling roller pair/couple, which couples act successively (and in the order stated) on superposed plies of substrate material to be bonded. (Figs. 3-4, English Translation Abstract and, in the translation provided: Page 5, lines 8-13 and page 12, line 19-21 and page 13, lines 12-14). One of ordinary skill in the art at the time the invention was made would have readily appreciated performing the laminating process taught by Sumitomo as modified by Sandt using the laminating apparatus suggested by Smuck et al. as only the expected results would be achieved, i.e. continuous lamination.

As to the cooling conditions (i.e. cooling time, temperature, and pressure), it is noted Sandt teaches cooling under pressure to below 280 °C such that cooling to room temperature would be encompassed by Sumitomo as modified by Sandt. It is also noted Sandt teaches cooling the laminate under pressure to minimize shrinking of the PTFE, and in view of this teaching one of ordinary skill in the art would have readily appreciated maintaining the cooling under pressure to a temperature (and thus for a specific time as the cooling time is a function of the temperature) wherein visual shrinking of the PTFE is minimized. Furthermore, the cooling

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conditions are dependent upon many variables including the thickness of the laminate, and Sumitomo is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal cooling conditions based upon the specifics of the laminate such as the thickness as doing so would require nothing more than ordinary skill and routine experimentation. Further regarding article-by-process claims 9-10, N.B. MPEP 706.03(e).

Regarding claim 14, absent any unexpected results it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the heating and cooling under the same pressure conditions.

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smuck et al.

Smuck et al. discloses a laminating apparatus composed of a heated roller pair/couple and a cooled/cooling roller pair/couple, which couples act successively (and in the order stated) on superposed plies of substrate material to be bonded. (Figs. 3-4, English Translation Abstract and, in the translation provided: Page 5, lines 8-13 and page 12, line 19-21 and page 13, lines 12-14). All of the essential structural and constructional limitations of these claims are seen to be satisfied by this reference, with the following being additionally advanced: (a) Smuck et al. fairly and clearly provide (N.B. page 5, lines 8-13 of the translation) for CONTROL of both the pressure and heat (or cooling) applied by their two (i.e. heated and cooled/cooling) roller pairs or couples such that it would have been obvious to one of ordinary skill in this art to effect the heating and cooling regimen set forth in the claims, this controlled apparatus being seen to be capable of performing this heating and cooling regimen. (b) As to the specific laminating

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conditions, these conditions are dependent upon many variables including the thickness of the laminate, and Smuck et al. is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal laminating conditions based upon the specifics of the laminate such as the thickness without requiring anything other than ordinary skill and routine experimentation.

Response to Arguments

6. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues "the references fail to teach all of the claim limitations, i.e. there is no disclosure or suggestion regarding the time in which cooling takes place". Regarding claims 1-11 and 14, it is noted Sandt teaches cooling the laminate under pressure to minimize shrinking of the PTFE such that in view of this teaching one of ordinary skill in the art would have readily appreciated maintaining the cooling under pressure to a temperature (and thus for a specific time as the cooling time is a function of the temperature) wherein visual shrinking of the PTFE is minimized. Furthermore, the cooling conditions, i.e. the cooling time, temperature, and pressure, are dependent upon many variables including the thickness of the laminate, and Sumitomo is not limited to a particular thickness such that one of ordinary skill in the art at the time the invention was made would have readily appreciated determining optimal cooling conditions based upon the specifics of the laminate such as the thickness as doing so would require nothing more than ordinary skill and routine experimentation. Regarding claims 11-13, it is noted Smuck et al. suggest typical laminating conditions (Page 13, lines 7-8 and 12-14 of translation). However, these conditions are only

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exemplary as the specific conditions are dependent upon many variables. Furthermore, Smuck et al. fairly and clearly provide for control of both the pressure and heat (or cooling) applied by the two (i.e. heated and cooled/cooling) roller pairs or couples such that it would have been obvious to one of ordinary skill in this art to effect the heating and cooling regimen set forth in the claims, this controlled apparatus being seen to be capable of performing this heating and cooling regimen.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **703-305-7481** (after December 2003 the telephone number will be 571-272-1216). The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



John L. Goff



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300